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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**STONE SOUP: A RECIPE FOR BUILDING RESILIENCY
AMONG CHILDREN**

by

Merideth Bastiani

March 2012

Thesis Co-Advisors:

Robert Josefek
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STONE SOUP: A RECIPE FOR BUILDING RESILIENCY AMONG CHILDREN

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Submitted in partial fulfillment of the
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from the

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ABSTRACT

Despite a decade of effort, we have seen limited success in increasing the personal preparedness of adults that is thought to create individual and community resiliency. Since inadequate preparation by adults can negatively impact children, preparedness education for children is now a priority. Unfortunately, the current resource-based model of preparedness presents a barrier to many children who have or control limited resources. This highlights the need to examine other approaches to achieving resiliency among children.

This thesis argues that adaptive capacity may be more beneficial for increasing resilience among children, that adaptive capacity can be taught, and that schools are the best place for such education to occur. Lastly, it addresses the significant challenges related to responsibility for teaching and content.

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LIST OF ACRONYMS AND ABBREVIATIONS

DARE	Drug Abuse Resistance Education
FEMA	Federal Emergency Management Agency
NPS	Naval Postgraduate School
NCLB	No Child Left Behind
OODA	Observation, Orientation, Decision, Action
PPD-8	Presidential Policy Directive 8
STEP	Student Tools for Emergency Planning
UN	United Nations
U.S.	United States

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I. INTRODUCTION

A. PROLOGUE

The Story of Stone Soup:

A kindly, old stranger was walking through the land when he came upon a village. As he entered, the villagers moved towards their homes locking doors and windows. The stranger smiled and asked, "Why are you all so frightened?" He explained, "I am a simple traveler, looking for a soft place to stay for the night and a warm place for a meal."

"There's not a bite to eat in the whole province," he was told. "We are weak and our children are starving. Better keep moving on." The traveler replied, "Oh, I have everything I need, in fact, I was thinking of making some stone soup to share with all of you." He pulled an iron cauldron from his cloak, filled it with water, and began to build a fire under it. Then, with great ceremony, he drew an ordinary-looking stone from a silken bag and dropped it into the water.

By now, hearing the rumor of food, most of the villagers had come out of their homes or watched from their windows. As the stranger sniffed the "broth" and licked his lips in anticipation, hunger began to overcome their fear. "Ahh," the stranger said to himself rather loudly, "I do like a tasty stone soup. Of course, stone soup with cabbage -- that's hard to beat." Soon a villager approached hesitantly, holding a small cabbage he'd retrieved from its hiding place, and added it to the pot. "Wonderful!!" cried the stranger. "You know, I once had stone soup with cabbage and a bit of salt beef as well, and it was fit for a king." The village butcher managed to find some salt beef . . . and so it went, through potatoes, onions, carrots, mushrooms, and so on, until there was indeed a delicious meal for everyone in the village to share. The villager elder offered the stranger a great deal of money for the "magic" stone, but he refused to sell it and traveled on the next day. As he left, the stranger came upon a group of village children standing near the road. He gave the silken bag containing the stone to the youngest child, whispering to a group, "It was not the stone, but the villagers that had performed the magic." (Unknown, ND)

This thesis starts with a story because stories make people think about children, and this thesis is about children. It also starts with a story to open the imagination of the reader, and to encourage the viewpoint that when it comes to thinking about protecting children in disaster situation, that there may be possibilities not yet explored, especially when we invite children

to participate in the process. This research is built upon the belief that all children are capable of amazing things when given the opportunity and guidance to achieve to their full potential. In our society, from an early age, children are encouraged to think and imagine. We give children building blocks and crayons and encourage them to create and build new things. We tell stories to children that challenge their imagination of what is possible, and teach them lessons that transcend those stories. Given this, it is possible that, meeting the needs of children in disaster is as much about what we envision them needing, as what children themselves may be able to imagine. The messages contained in this story are valuable because they are transferrable, and not specific to the story itself. In essence, the story about making stone soup is not a recipe for how to make soup, but a lesson regarding the potential of people. It can be used to teach children about the power of collaboration, the strength of good leadership, and the importance of community, all of which are all highly relevant lessons to the discourse on homeland security. The magic of the story is that there is no right or wrong way to interpret it, just as there may be no one right or wrong way to meet the needs of children in disaster.

B. PROBLEM STATEMENT

Having already observed the tenth anniversary of 9/11, it is concerning that preparedness levels among the general population are still not significantly higher than they were preceding this landmark event. Substantial efforts to educate and promote personal and community preparedness were initiated by government, private partners and educational institutions after 9/11 and were reinforced following the devastation caused by Hurricane Katrina in 2005, and in the aftermath of every major natural disaster to strike the nation since that time. Despite this, the Federal Emergency Management Organization's (FEMA) Ready campaign, the American Red Cross' Readiness campaign, and efforts of the Citizen Corps have produced minimal behavior change among our citizenry (May, Sapotichne, & Workman, 2009).

Some people have asked whether preparedness is actually important, especially given the lack of subsequent successful terror attacks on U.S. soil. The government perspective is that a prepared and engaged citizenry would require less support following a disaster of any sort. In this context, a prepared constituency is one which is ready to react and respond to the situations presented to them (Hall, 2006). This is the foundation on which present day preparedness efforts have been built. Few Americans will argue

that we live in an unpredictable world. In 2011, fourteen severe climatologic events occurred, each of which inflicted in excess of one billion dollars in economic damage losses. Cumulatively, the economic damage from these fourteen events exceeded fifty-five billion dollars (National Climatic Data Center, 2012). The economic toll, while extreme, does not measure up to the social impact of these events. Over six hundred and fifty people died as a direct result of these fourteen events, countless others were injured, and millions of lives were disrupted.

Presidential Policy Directive 8 (PPD-8) issued in March of 2011, calls for a whole community approach to meeting the country's need for Preparedness. The whole community approach requires giving consideration for how government, private sector, faith based institutions, and citizens can support each other in the process. It reflects a philosophical shift designed to foster increased cooperation and collaboration between the public and government for the purposes of fostering resiliency. Whole Community is founded on the belief that raising the level of individual preparedness will add to community resiliency. Resilience in this context is considered the ability to bounce back after a disruptive event, and return to a state of near normal functioning without heavy intervention from an outside source (FEMA, 2011). To accomplish this, PPD-8 specifically calls for broadening the partnerships that already exist between citizens, community leaders, business, other organizations and government to include dialogue around increased engagement in the preparedness process (FEMA, 2011; The White House, 2011). The National Preparedness Goal which is based on PPD-8, and was released in September of 2011, elaborates on the idea that national preparedness is the responsibility the whole community. The National Preparedness Goal identifies some of the organizations within the community such as religious and community organizations that should be engaged in efforts designed to increase preparedness (United States Department of Homeland Security, 2011).

The measure of individual engagement is based on participation in preparedness behaviors as defined by the federal government through the Ready Campaign. From 2001 through 2011, the Ready campaign focused on getting a kit, making a plan, and staying

informed (FEMA Ready Campaign, 2011). In January of 2012, this was revised to “Prepare, Plan, and Stay Informed.” Although the order of the actions has changed, little else in the way government recommends people prepare has. The existing benchmark of citizen preparedness continues to require written plans and the stockpiling of goods and supplies. Unfortunately, the cost, need for storage space and finding the time to obtain and maintain the list of recommended supplies makes this unattainable and unattractive for much of our population. Additionally, the preparedness needs of individuals vary widely based on social, cultural and geographical factors, yet preparedness is still being promoted as an “all or nothing, one size fits all” product.

Since 2001, initiatives towards increasing preparedness behaviors have been focused primarily on adults. Preparedness for and among children has typically been predicated on the actions of the adults around them which means that when adults don’t prepare, children are left vulnerable. The National Commission on Children and Disasters identified the lack of preparedness for children as a critical gap in their 2010 report to the President and Congress (The National Commission on Children and Disasters, 2010). Providing preparedness education programming to school-age children has been proposed as a method to increase preparedness among the population at large. This is based on research which shows that children will share what they learn about preparedness with their families, which may resultantly change family behaviors related to preparedness (Conroy, 2008). Based on this, efforts have been made to develop school based curriculum for children. While the concept has merit based on the theory that preparedness behaviors learned at an early age may carry in to adulthood, the existing model of preparedness requires the assembly of a material kit, and family participation, both of which may be challenges for some children.

This suggests that financial and other social resources need to be part of the discussion when considering how to meet the preparedness needs of children. An effective model needs to account for all children, especially those who live in poverty, or who have limited family support. Children, defined as individuals under the age of 18, are approximately 25 percent of the United States Population. According to federal

government statistics, the number of children living in poverty has risen in recent years. Based on data from 2009, it is estimated that 21 percent of children ages birth to seventeen live in poverty. This equates to 15.5 million children living in poverty (Forum on Child and Family Statistics, 2011). Expecting a child living in poverty or with minimal family support to develop a written plan which requires parental involvement, or stockpile costly supplies may be completely unrealistic. Furthermore, the same barriers that prevent this child from participating in this sort of activity are contributing factors to their vulnerability both during and after a disaster (Fothergill & Peek, 2004).

There are also challenges to implementing preparedness programs for children which include the need to determine what will be taught, who holds responsibility for developing and delivering the lessons, and how to design a curriculum that benefits all children regardless of socio-economic status or family structure. The design and delivery of curriculum has been among the largest challenges as schools report that they are already overwhelmed with required curriculum, and that teachers have no formal background in teaching these concepts. Public safety organizations such as fire and police departments are often considered as an alternative resource for providing preparedness education to children. Similar challenges exist in terms of curriculum design, content, training, and available resources when considering placing the responsibility on public safety professionals.

This presents a complex problem. Children are our future, and represent a highly vulnerable population that society has an obligation to protect, yet many people, especially children within our society lack the financial and social resources to accomplish the established measure of preparedness. Those that have the means are not engaging for a variety of reasons, and both situations are resulting in a failure to address the needs of children. Furthermore, there is a lack of clarity on what should be taught, and who should be responsible for implementing preparedness programs for children.

These are problems that relate to the current initiatives towards preparedness for children, and the inability to solve them impedes progress at fostering resiliency, which is the goal of PPD-8. Given the current focus on the whole community approach, which is

intended to increase resiliency through the involvement of communities, it seems prudent to further examine the relationship between preparedness and resiliency; and consider how initiatives for children can align with the goal of promoting resiliency. The question that no one is asking is: Are we are trying to accomplish the right thing. Preparedness is seen as a pathway to building resiliency because resilient individuals and communities need less support after a disaster. If resilience is the actual goal, then there may be other ways to promote resiliency among children without focusing specifically on preparedness.

C. RESEARCH QUESTIONS

This thesis sets out to examine how resiliency can be increased among older children. In order to accomplish this, the following research questions will be used to explore the issue:

What creates resiliency?

Who should be responsible for teaching or implementing programming?

What should be taught, and how would this differ from existing preparedness programming?

Where should it be taught?

D. ARGUMENT

Designing a model of preparedness that fits all children in a country with enormous diversity in terms of language, culture and socio-economic status is an enormous challenge. As we look at how to implement programs that will teach preparedness to children, we need to consider what it is that we want children to learn. The research suggests that a concept of preparedness, which is resource based, is unattainable for many children and families, and it may not be practical or even meaningful given the unpredictable of nature of disasters.

The trend has been to look towards simple solutions, such as curriculum, to help children or caregivers become prepared. Such solutions focus on what we know as good

practice based on past experiences. Based on this, they tend to rely on resources as opposed to reasoning skills. This is because past experience has shown that certain things were needed, or made a difference in a particular situation. What this fails to consider is the possibility that similar or new resources may fill the same need, or even perform better. In this way, the existing process potentially stifles the development of useful and potentially superior solutions or options.

Children, adults, families, communities and other social structures do not exist independent of each other, or the environment in which they live. They exist in a complex system that is influenced by continuous social, technological, environmental and philosophical changes. It is possible that Americans are choosing not to prepare because the current model of preparedness does not effectively account for those interrelationships. It may also be that the model does not keep pace with the changes that result from these interrelationships, or it may be a combination of the two. If this is true, then accounting for this may allow for the development of programming for children and caregivers which achieves resiliency, which is the established end goal of preparedness initiatives. In this way, preparedness behaviors could be supplemental to, and increase and support resiliency, rather than a single track method to achieve it. In order to explore this theory further, the proposition that resiliency is a combination of adaptive capacity and resource robustness, as identified through the literature, will be considered as a possible framework for the establishment of resiliency-focused programming.

E. SIGNIFICANCE OF RESEARCH

This thesis represents an effort to add to the existing body of literature focusing on the challenges of accounting for the needs of children in disaster situations. It sets out to evaluate the existing framework and mindset of programming that promotes preparedness in order to examine the relationship between preparedness and resiliency. Examining the connection between the two is intended to provide a platform from which to consider alternative approaches to increasing resiliency that are able to circumvent some of the identified barriers to preparedness.

F. DEFINING CHILDREN

There are a number of ways in which children can be grouped. For the purposes of this research, the term young children will refer to those who are not yet enrolled in Kindergarten or higher. The term older children will be used to describe the group of children enrolled in elementary school and higher, and the term youth will be used to identify children enrolled in middle school and higher. The intent is to have them serve as general groupings to help identify issues, traits, trends or general capabilities among particular age groups.

G. ESTABLISHING THE SCOPE AND FOCUS OF THE THESIS

It is virtually impossible to consider preparedness for children without considering their role in society and the interdependencies between adults and children. Similarly, it is extremely difficult to focus on one specific age range within the definition of children because much of the research base, as well as available case studies, transect these groupings. While the subject of this thesis is resiliency as it relates to all children, significant focus will be placed on children elementary school aged and higher with the intent that the more general findings can inform practice for young children and caregivers. In addition, while some recommendations resulting from this research may be applicable and appropriate to children with disabilities, some recommendations may need to be tailored based on developmental level and specific types of needs for some children. The driving force behind this project has been to identify how programming to support the needs of children in the case of a disaster can be accessible and meaningful to the highest percentage of children possible.

H. METHODOLOGY

Returning to the introduction of the thesis helps to explain this methodology. The story of Stone Soup has an underlying moral message. That is what was being taught, who tells it or where it is told, are secondary to the story itself. The story retains its value even if someone else tells it, or it is told to a new audience. While different opportunities may arise based on these factors, the function of telling the story of Stone Soup would

remain essentially the same; it would provide an opportunity to think about collaborative behaviors, and how the decisions we make influence our own future and that of others.

Utilizing the literature base on preparedness, adaptive capacity and resiliency, this thesis will explore the how the interface between adaptive capacity and resource robustness influences resiliency for older children. This will be done through a review of the pertinent literature, and a qualitative analysis of case studies where children protected themselves and influenced the behavior of adults. The evaluation of the case studies will be used to determine whether the actions of these children are reflective of adaptive capacity, resource robustness or a combination of the two. In combination, the literature and analysis will then be used to consider where resiliency-based programming should be delivered, who should deliver it and what the content should be.

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II. LITERATURE REVIEW

A general review of the literature related to preparedness, perceptions of preparedness, barriers to preparedness, and children in the preparedness process will be conducted to provide background information on the subject. This will include exploration of the interconnections between preparedness behaviors and resiliency. Based on the proposal that the complexities of the environment in which we live influence preparedness behaviors, literature on complexity theory as it relates to preparedness and resilience will also be evaluated. The purpose of this analysis is to provide insight that can inform government practice related to preparedness and resiliency for children.

A. PREPAREDNESS

1. Increasing Preparedness

The literature on the current model of preparedness revolves around the need to engage citizens in a defined set of behaviors. Research on how to engage the public in preparedness suggests that we need to develop a sustainable “culture of preparedness” in the United States. Paula Bloom’s 2007 Naval Postgraduate School (NPS) thesis and Ann Marie Conroy’s 2008 NPS thesis both explore the need for and how to accomplish this. Conroy began the work by evaluating the different aspects of preparedness to determine where to start this process. She identified the need to define a vision for the future as paramount to helping citizens invest in the process. Furthermore, her recommendations prioritized clarifying the role of government in promoting preparedness, and the need to better define leadership in the preparedness process (Conroy, 2008). Bloom looked more generally at the preparedness process by examining if the challenges to increasing preparedness are culturally entrenched, as opposed to systematic issues. Her research determined that it is a combination of the two and made recommendations for increased efforts at targeted information campaigns for subsections of the public regarding their role in preparedness (Bloom, 2007).

Nicholas Composano also examined addressing preparedness on a cultural level in his 2010 thesis, which evaluated the utility of the Citizen Corps Personal Behavior Change Model for Disaster Preparedness. Composano's research focuses on what motivates people to engage in preparedness behaviors and the efficacy of behavior change models to increase emergency preparedness behaviors. Composano concludes that the benefit of behavior change models can be enhanced by leveraging the influence of social relationships and community on preparedness behavior adoption (Composano, 2010). A common theme in the research of Bloom, Conroy and Composano is the idea that preparedness behavior is influenced by the combination of the individual, cultural context, and government and community influence. This supports the working hypothesis that such factors influence the way we view preparedness.

Terry Adirim suggests in a 2009 article in the Journal of Clinical Pediatric Emergency Medicine, that government, private sector, and professional societies need to work to help families prepare themselves for disaster situations. Similar to Bloom and Conroy, he advocates for the establishment of a "culture of readiness" aimed at improving individual and family preparedness, utilizing existing social, educational, religious and medical institutions. Adirim also focuses on the role that government can play in promoting preparedness in terms of incentives to businesses. This includes consideration of extending incentives to those that are able to facilitate employee preparedness (Adirim, 2009). Essentially, what Adirim advocates for is greater networking across systems based on the idea that a broader support network could reinforce preparedness behaviors.

Adirim's recommendations align nicely with the whole community approach called for by Presidential Policy Directive 8 (PPD-8). The whole community model was evaluated in a working paper initially presented at the London Workshop of the Multinational Community Resilience Policy Group in November, 2010. This paper explores the whole community approach by evaluating case studies to identify the ways in which communities responded to meet their own needs following disaster. This research was conducted in an effort to identify barriers, as well as identify trends that

could be used to inform policy aimed at community engagement and informing the field of emergency management (Bach, Doran, Gibb, Kaufman, & Settle, 2011).

The National Preparedness Goal released in September 2011, highlights the need for the whole community approach to building resilient communities and meeting the needs of our citizens following disaster (United States Department of Homeland Security, 2011). Whole community is focused on establishing resiliency, and considers preparedness a tool to support it. In this way, the whole community approach is attempting to utilize community as the foundation on which preparedness can be built rather than a mechanism to market or endorse existing preparedness efforts. This requires engagement of individuals, organizations and government to work together to identify community needs and determine how they can be met. Unfortunately, the whole community approach lacks a metric that can judge the success of these collaborations predisaster. Without other alternatives, the measure of success currently defaults to the adoption of, or engagement in preparedness behaviors.

2. Perceptions Regarding Preparedness

The literature on perceptions of disaster and preparedness is included as a mechanism to consider some of the societal preconceptions which influence preparedness behaviors. When viewed independently, they speak to the need for clearer messaging to the public in terms of communication of risks, and the realities of disaster situations. When viewed in conjunction with the literature on personal participation in preparedness behaviors and the barriers to preparedness, they help to broaden the understanding of the multiple factors that influence individual and community behaviors.

Media is extremely influential in how we think of disaster, and this in turn influences perceptions regarding preparedness. How we think about something as a group represents a socially constructed belief. The social construction of an event influences how we think of it in the present, as well as how it is remembered. The social

construction of Hurricane Katrina was highly influenced by media technology, which allowed the public continuous live coverage of the events that unfolded in the days following the storm.

Havidan Rodriguez and Russell Dynes considered the sociological impact of this sort of continuous coverage in their report *Finding and Framing Katrina: The Social Construction of Disaster*. They argued that the actual effects of the hurricane became overshadowed by the rumors and inaccurate assumptions that led to reporting about widespread chaos and anarchy, and that the media sustained this through the establishment of media themes, which were used during the coverage. These themes; finding damage, finding death, finding help, finding authority and finding the bad guys, provided a view of the disaster, which was dramatic and captivating. This was possible because it was viewed out of context. Rodriguez and Dynes felt that this diverted attention from the longer term needs of the individuals displaced from their communities, or the long process towards recovery (Rodriguez & Dynes, 2006). In the case of Hurricane Katrina, Rodriguez and Dynes felt that the socially constructed understanding of the event, as influenced by media, was that government had failed the people rather than people had failed to listen to government. This potentially had long-term effects on perceptions related to preparedness behaviors, and the relationships between individuals, communities and government.

In the Book *Response to Disaster*, Henry Fischer discusses the behavioral and organizational challenges that influence response capabilities on both an individual and organizational level during the stages of a disaster. This includes consideration of existing disaster mythology. Disaster mythology is a pre-established set of beliefs regarding how people will act during and after a disaster. Fischer identifies the core beliefs of disaster mythology, which include the idea that people will panic and engage in looting, that there will be price gouging and the spread of other deviant selfish behaviors that may ultimately require the establishment of martial law. Fischer postulates that such mythology encourages inaction because of the perceived disorder that would negate the usefulness of planning following a disaster. In fact, Fischer's research suggests that

disaster generally brings about the opposite response, presenting a scenario where people are more likely to act in an altruistic manner, share resources, and aid each other (Fischer, 2008).

Amanda Ripley considers why some people survive disasters while others do not in her book *The Unthinkable: Who Survives When Disaster Strikes- and Why*. Ripley suggests that when disaster strikes, we tend to view the survivors as having had good fortune and often fail to consider what made it possible for them to survive in the first place. Through the review of numerous case studies, Ripley concludes that rehearsal, leadership and knowledge influence survival more than any other factors. Essentially, what Ripley finds is that surviving a disaster is less about what you have, and more about what you have done to think about the possibilities of what might happen. This pre-event preparation aids in the ability to think and process the events of a life-threatening situation (Ripley, 2008).

Ripley introduces the concept of a “disaster personality,” which reflects the resilience a person possesses. Attributes of disaster personality include attitude, knowledge, anxiety, physical fitness and training, or rehearsal of self-preserving behaviors. In this way, Ripley suggests that the way a person thinks about disaster and their own capabilities is the most influential aspect of survival. Based on this, Ripley believes that individuals can work to ready themselves for disaster, or even change their disaster personality by addressing their beliefs and actual personal readiness. Interestingly, Ripley’s list entirely lacks any reference to the accumulation of resources, and focuses predominantly on knowledge and physical readiness to act. This approach supports the idea that resources may be secondary to knowledge or ability to act in emerging disaster situations.

3. Barriers to Preparedness

The media coverage of Hurricane Katrina highlighted many of the social and economic challenges faced by the population of New Orleans and the Gulf Coast. The field of vulnerability research focuses specifically on this. In his article entitled *Race*,

Class, Ethnicity, and Disaster Vulnerability, Bob Bolin describes the purpose of vulnerability research as a mechanism to consider the “political economic inequalities and processes of racial and ethnic marginalization in relation to the risks from environmental hazards.” (Bolin, 2006) Vulnerability research diverges from mainstream disaster research specifically because it considers the cumulative impact of how societal factors complicate the situations which arise following a disaster, as opposed to viewing them as acute problems to be addressed within the context of the specific disaster response. Essentially, this means that finding solutions to the situational issues that arise during the disaster needs to consider the societal issues that contributed to, or allowed them to occur (Bolin, 2006). Bolin’s work reinforces the idea that social and cultural context are influential on the post disaster stage because they influence pre-disaster status of individuals and communities.

In 2004, Alice Fothergill and Lori Peek provided an analysis of the existing literature on poverty and disasters in their journal article entitled; *Poverty and Disasters in the United States: A Review of Recent Sociological Findings*. They found that people living in poverty are more vulnerable to natural disasters. Physical geographical factors, such as location of, age of and construction type of residences, were identified as contributory to increased vulnerability. Physical and psychological impact of disasters was also found to be much higher on low-income individuals and communities. Their research also found that the way people respond during certain phases of a disaster is influenced by social class. The results have important implications for research regarding children because of the high number of children living in poverty, and the fact that economic hardship directly contributes to vulnerability.

Urban areas typically have high concentration of minority populations. For this reason, a study was conducted by Drexel University in 2009 to evaluate preparedness behaviors in culturally diverse communities in California. Interestingly, the measurement of preparedness, which was used in this study, was unique in that it evaluated for “a coordinated and continuous process of planning and implementation” rather than a static measurement of it (Andrulis, Siddiqui, & Purtle, 2009). This is one of the few places in

the literature where preparedness is discussed as a continuous process as opposed to a benchmark, or state to be achieved. The Drexel Report highlights many of the challenges that present when assessing communities, such as demographics and diversity. Among the relevant findings was the identification of the need to place emphasis on evaluating the situational factors that relate to preparedness behaviors and to considering variables outside the control of the group. The research also raises the question—if preparedness means the same thing across regions or within groups. This is important because the lack of a common understanding of the expectations presents a challenge to measuring it.

The Federal Emergency Management Agency (FEMA) issued two reports on the level of citizen preparedness that were based on surveys conducted by the Citizen Corps in 2009. These reports offer insight into public perceptions and behaviors related to preparedness. The report titled: *Personal Preparedness in America: Findings from the 2009 Citizen Corps National Survey* is based on research conducted in April and May of 2009 and represents the most recent large-scale assessment of community perceptions and behaviors available in the literature. The recommendations resulting from this survey include five suggested strategies designed to promote increased and more effective preparedness. The strategies identified are as follows:

- Stress that preparedness is a shared responsibility
- Provide more specificity on preparedness actions
- Highlight additional preparedness needs for people with disabilities
- Emphasize the importance of drills and exercises
- Offer specialized information on the survivability of manmade disasters

A second report produced by the Citizen Corps, the *Citizen Corps Urban Area Survey*, focused on specific concerns for urban areas. Similar to the findings of Bolin, this report identified a unique set of challenges faced by urban areas. Although the report confirmed that there are differences in the barriers to preparedness between the two populations, the recommendations for increasing preparedness did not change substantially, and are nearly identical to the ones listed above.

4. Preparedness Programming for Children

The Citizencorps published a review of literature related to children and preparedness in the summer of 2010. The intent of this publication was to provide guidance on developing tools to assess current preparedness programming for children, and enhance efforts to deliver preparedness education programs to children. The findings of this review were categorized into three areas: individual/youth preparedness education, school programs and curricula, and community engagement for youth preparedness.

The review identified five themes related to individual and youth level preparedness. These themes are:

1. Children Play a Special Role in Disaster Preparedness
2. Unique Learning and Developmental Differences Exist Between Children and Adults
3. Children's Unique Vulnerability to Disasters Can Cause Adverse Effects if Exposed
4. Familial Factors Can Influence How Children Cope With a Disaster
5. Scare Tactics Are an Ineffective Strategy in Educating Children About the Realistic Risk of Disasters

The first theme, that children can play a special role in Disaster Preparedness, speaks to the ability of children to influence the preparedness behaviors of adults. It is based on research that shows children can successfully be engaged in child friendly activities that communicate the risks of disaster, and that such programs can provide skills to help children communicate the importance of preparedness to family members. This can be especially important in families where English is not the first language (Citizen Corps, 2009). While this does support the idea that children can be more than passive recipients of preparedness, it does not specifically address the general dependency on services provided by adults. What appears to be lacking in these recommendations is any evidence to dispute the tendency to view preparedness for children as entirely dependent on adult behavior, as opposed to potentially child initiated.

One interesting finding in the literature review is support for the idea that children can sometimes contribute in unexpected ways to community recovery after a disaster (Citizencorps, 2010). This is based on the research of Lori Peek, who argues that the ideas children present may add value to the process of rebuilding communities. Despite the fact that disasters disrupt the physical spaces and social structures that influence children, Peek argues that children are typically given minimal, if any input, in the decision making to help communities recover from disasters. Peek believes that children can and should be included in this process because they are able to identify their own needs and may have creative solutions that meet their actual needs better than ideas developed by adults. This is because planning by adults is based on their perception of children's needs and abilities, which may not be an accurate reflection of what they are in reality (Peek, 2009).

The fifth recommendation in the report suggests that caution needs to be taken regarding how and what materials are presented to children because scare tactics have been found to be ineffective. Teresa Gustafson addressed this in her 2009 NPS thesis. She recommended that any preparedness education program must have a balance between messaging that can instill fear, and the necessity to inform children of potential risks (Gustafson, 2009).

The literature regarding school-level preparedness programming reinforces the commonly held belief that schools are the best place to deliver preparedness education because attendance is mandatory. The six themes that emerged from the discussion about delivering preparedness education in schools are as follows:

1. Schools are an Ideal Place for Children to Learn Disaster Preparedness Skills
2. Hazard Education Increases Awareness, Realistic Risk Perceptions, and Knowledge of Protective Behaviors
3. Educational Programs Help Promote Protective Factors While Taking Risk Factors into Account
4. Educational Programs Should Address a Range of Hazards and be Reinforced Over Time

5. Educational Programs Should Encourage Interaction Between Parents and Children
6. Demographic and Cultural Differences Should be Taken into Consideration When Developing Educational Programs.

The focus on the use of schools as a venue for preparedness education is logical because it is the consistent opportunity that presents for all children. Unfortunately, these recommendations do not look at the challenges to incorporating such programming in school settings. Each of the six points identified are founded on solid educational and developmental theory. Unfortunately, although they may be good ideas, the implementation of them has been problematic.

The Citizen Corps review incorporates research on developing curriculum to be delivered in schools to increase preparedness for children. This included Gustafson's recommendation that preparedness curricula be made mandatory for children in Kindergarten through 12th grade. Her thesis explored the conceptual and ethical challenges of preparedness education and concluded that preparedness education for children would be valuable to creating change in the community at large because children have the ability to promote change within a family structure. It also validated the belief that children can engage in carefully planned preparedness related education without fear of negative psychological implications, if adequate caution is used to avoid fear-based messaging (Gustafson, 2009).

The third area evaluated in the Citizen Corps literature review is findings on the community level and resulted in two findings. The first finding is that: Community Involvement Should Be Encouraged and Supported in Providing Disaster Preparedness Education. This is based on research that shows participation in community activities geared towards preparedness can increase the value of these efforts. This suggestion is consistent with the findings of Composano and of the philosophy supporting the whole community approach. The second finding is that: Children Can Become Involved in Communities in Terms of Preparedness, Education, and Recovery. This section of the review draws from research that has shown how preparedness education for children can

help them develop skills to deal with identified hazards in their communities, and that children can influence community behaviors by teaching adults about what they have learned. This draws primarily on international case studies from Vietnam and India where children were able to influence community behavior and teach other children preparedness lessons. Some evidence of this is shown in case studies of Vietnamese children living in the New Orleans area during Hurricane Katrina. In this example, children were able to convey the risks to non-English speaking family members who could not understand the messaging that was being communicated through public safety channels.

The outcome of the Citizen Corps review was a list of recommended practices for delivering disaster education programs in the United States. Twelve recommended practices were identified that focus on how to increase preparedness for children. While these actively acknowledge the potential of children to engage in preparedness behaviors, they rely heavily on school-based programming and provide no specific guidance on addressing the social and monetary barriers to preparedness education beyond calling for the involvement of the community.

In September of 2010, a National Summit on Youth and preparedness was held to gather input on how to “... increase youth preparedness knowledge skills and behaviors, and to address youth of all abilities and backgrounds.” (Citizencorps, 2011) This summit was held with the intention of producing a National Strategy on Youth Preparedness Education. Although the strategy has not been finalized, the Summit report provides information on the details of the conference and a summary of their conclusions and recommendations.

Several of the recommendations from the summit focused on including youth, both as a resource for development of programs, but also as being capable of holding a meaningful role in the preparedness process. Other recommendations included identifying areas of good practice so that they can be replicated, finding easy entry points where preparedness education is a good fit, and establishing opportunities to incorporate youth in the leadership of and design of preparedness programs. There was an

overwhelming consensus that youth can play a meaningful role in the process. This is encouraging; however, this summit focused entirely on finding ways to increase participation in the current model, as opposed to if adjustments to the concept of preparedness are needed or considering alternative models. As a result, including youth preparedness education in school curricula was ranked first on the list of things that can influence youth preparedness. Several of the lower ranked recommendations are better aligned with the idea that the model of preparedness may need to be adjusted. These include the recommendations to give youth a voice in community preparedness planning, and to increasing volunteer opportunities for youth in emergency preparedness.

The theme that children can promote community change is found in other areas of literature. This further validates the belief that children can play an active role in their own safety. One resource that discusses the role of children as “agents of change” is a 2009 report published by the Climate Change and Development Centre, and it examines how children can influence adult behavior within both families and communities (Mitchell, Tanner, & Haynes, 2009). There is also a substantial literature base in the realm of educational leadership and youth development, which supports the idea that children and youth can influence community behavior. A number of studies address the impact of globalization, and the role of the individual, as they move from childhood to adulthood and identify their role in society. Among these is a 2007 article in the *Journal of Educational Leadership*, which highlights the need for young adults to understand the interrelationships between their local community, and the nation and the world in order to make informed decisions (Stewart, 2007).

5. Summary

As a whole, the literature on preparedness for the general population, and specific to children, validates the hypothesis that there are multiple layers of barriers that exist to getting the general public to engage. It supports the belief that perceptions of preparedness and disaster influence engagement in preparedness behaviors, and that these perceptions are heavily influenced by both the media and socially constructed beliefs.

The literature agrees that the role of community is considered critical in terms of facilitating preparedness behaviors, and it is considered an avenue for bridging some of the challenges that present from a resource based model.

While there is some evidence in the literature that suggests children can play an important role in their own preparedness, this is generally reliant on adult led initiatives, as opposed to children identifying their own needs or developing programming that will fill unmet ones. The overwhelming focus of the literature on children and preparedness education is on increasing opportunities to provide preparedness education through school-based programming, and it suggests that continued adjustment to the current system can achieve this. There is minimal evidence that the current model of preparedness is being challenged. There is also a lack of evidence to suggest that a substantial effort has been made to find ways to overcome the identified barriers to make preparedness education accessible and valuable for all children.

B. ADAPTIVE CAPACITY, PREPAREDNESS, AND RESILIENCY

The combination of complexity theory and ecological science is a place in the literature base that examines in depth the issues of preparedness and resiliency. Lance Gunderson looks at the role of adaptive capacity in the context of comparing ecological and human community resilience to natural disasters. He suggests that the way such events disrupt community systems is similar to how they disrupt ecological systems. He suggests that it is the “speed, severity and complexity of natural disasters” that challenges us to adjust our response, and that similar to an ecosystem, when we are unable to adapt to the situations that arise during and after disaster, we are either less likely to survive, or at a disadvantage to recover. The natural environment is used as an example in which scientific evidence has shown that the physical environment may not recover, if it does not have the strength or adaptability needed to withstand major change.

Gunderson suggests that the similarities between the natural environment and community reveal five important cues that can be used in further research on human resiliency. These are: 1) Resilience is present in both ecological and community systems,

and that resilience is the mechanism that allows for recovery and or adaptation; 2) Diversity contributes to resilience; 3) Capital, or resources are vital to both systems, although the type of capital can vary from physical resource, to socially based; 4) Recovery will take place at a graduated pace, meaning that not all parts of a system will recover at the same pace or in the same manner, and; 5) Resiliency relies on contextual learning, which is a function of adaptive capacities (Gunderson, 2010).

In their 2010 article in the *Journal of Homeland Security Affairs*, Patricia Longstaff and colleagues consider the balance between resources and knowledge when they explore the development of a framework for assessing community-based resiliency. Longstaff et al. postulate that community resiliency is not predicated on one specific measure, such as being prepared, but that it is a result of the combination of resource robustness and adaptive capacity.

Resource robustness considers what is available to the community and can include the “objects, conditions, characteristics and energies that people value” (Longstaff, Armstrong, Perrin, Parker, & Hidek, 2010). They suggest that performance, diversity and redundancy of the resources available to individuals within communities are the defining features of robustness. In contrast, adaptive capacity is about using knowledge and can be viewed as a function of the ability of individuals and groups to retain institutional memory in the form of historical knowledge, implement innovative learning, and leverage connections. Adaptive capacity influences how resources can be used, and conversely, resource robustness is dependent on adaptive capacity. The combination of the two is what Longstaff and colleagues argue facilitates resilience. Their theory is that a deficit in one can be overcome by a surplus in the other. This means that a complete lack of both would lead to decreased resiliency and an abundance of both would theoretically lead to an amplified resiliency. This suggests that influencing either side of the equation could have positive effect. In consideration of the barriers to

accumulation of resources identified during the review or the literature on preparedness, this supports the idea that working towards building adaptive capacity might be a meaningful approach.

Although the fundamental goal of preparedness on a national level is to increase resiliency, there is currently no set expectation for how it will be evaluated. According to Phillip Palin, there are shared characteristics that influence resiliency on an individual, community or system level that could help frame a methodology for measuring resiliency and provide clues for how to increase it. These characteristics are Awareness, Connectedness, Realism, Agility, and Flexibility. In his article entitled *Resilience: Five principles of good practice*, Palin suggests that resilience can be promoted, developed and strengthened through efforts to build each of these principles on the individual level, which will in turn influence the community, and then the system. The principles are each expanded on as follows:

- **Awareness:** Observe and engage the full context
- **Connectedness:** Recognize and engage our full range of relationships and dependencies
- **Realism:** Differentiate between cause and effect, capacity and capability, novelty and continuity
- **Agility:** Expect change in context and relationships, remain creatively open to change, and actively embrace change
- **Flexibility:** Expand the “basin of attraction” where and how turbulence can occur without threatening our fundamental identity

Palin suggests that these five principles can be taught using an existing model implemented by the military for developing resilience. This model is based on Observation, Orientation, Decision, Action (OODA) and referred to as OODA loops because it is meant to be consistently reapplied to evaluate changing environments (Palin, 2011). Palin is essentially advocating for knowledge-based processes for increasing resiliency, while acknowledging the need for ongoing integration of new information in to the decision-making process. This supports the theory that teaching specific solutions may not be enough to guide people through complex situations because the changing

situation will influence what measures are useful. If the situation has changed significantly, it could potentially negate the utility of those solutions that were valuable in a previous context.

In summary, the literature on preparedness and related matters supports the idea that preparedness is essentially a vehicle to promote resiliency. If resiliency is the true goal of current preparedness efforts, than it may be advisable to realign the goals of the system that currently focuses on preparedness and instead consider a purpose of promoting resiliency. The literature further suggests that resiliency is a combination of adaptive capacity and resource robustness. This is extremely relevant to addressing the challenges faced to achieving the current model of preparedness because the literature on preparedness identifies lack of resources as one of the major challenges to preparedness for and among children.

III. EXPLORING THE POSSIBILITIES OF RESILIENCY- FOCUSED PROGRAMMING FOR CHILDREN

A. INTRODUCTION

As the literature suggests, evaluating how to increase resiliency among children involves exploring the interface between a very diverse community, a multilayer system, and changing situations brought about by the innovation of humans, the unpredictability of nature and sometimes a combination of the two. This presents unusual challenges when considering how to influence public policy on this issue, since the standard rules of cause and effect do not always apply to situations with so many interdependencies. Rodrigo Nieto-Gomez aptly describes this place when he writes that “a social environment for public policy is not a snapshot frozen in time, but a mutating context where people operate and interact with each other and with the natural and man-made structures that surround them, and each interaction morphs a little bit the state of the system. It is more an ecosystem than a photograph.” (Nieto-Gomez, 2011)

What is so powerful about the description used by Nieto-Gomez is although the concept of the ecosystem suggests an evolving process that can adapt to and incorporate new ideas, or move away from those that are not beneficial, it also remains subservient to structures and forces that influence it, such as physical location and weather. Not only does it accurately describe the space from which public policy arises, it also captures the essence of the nexus between children, preparedness, and community, which is clearly influenced by family and community structure, social change, technology, poverty, geography, and even preconceived notions of what children are capable of. These factors in themselves are not static or uniform; they are both interconnected and evolving.

In the past, recommendations for increasing preparedness for children have focused on changing adult behaviors and finding ways to implement preparedness programming in to schools. It is possible that shifting the focus from preparedness to one of resiliency may be powerful enough to overcome some of the challenges that have arisen from preparedness focused programming; however, it is theorized that

accomplishing this may require adjustment on many levels. For that reason, this section of the thesis will examine each of the four research question independently, and then seek to draw conclusions and provide recommendations based on those findings.

B. WHAT CREATES RESILIENCY?

The literature reviewed on the subject of preparedness and resiliency strongly supports the idea that resiliency is the intended goal of preparedness efforts. It also clearly identifies the relationship between adaptive capacity and resiliency, both in the natural world, and in human relationships. The work of Patricia Longstaff and colleagues specifically looked at an additional factor by considering the relationship between adaptive capacity and resource robustness in creating resiliency. Although the model proposed by Longstaff et al. is not designed to evaluate resiliency on the individual level, it is theorized that the model has potential to account for the multi-layered and interconnected forces that influence children and adults. If this is true, it may provide clues for how to develop a resiliency-based approach for educating and involving children.

The following chart (Figure 1) provided by Longstaff et al. shows the interrelationship between adaptive capacity and resource robustness in reference to resiliency within communities. The gross area of resiliency is comparable between the two communities, but it is created through a very different combination of resource robustness and adaptive capacity. The presence of resiliency is, in this manner, dependent on both factors—but influenced by whichever is greater.

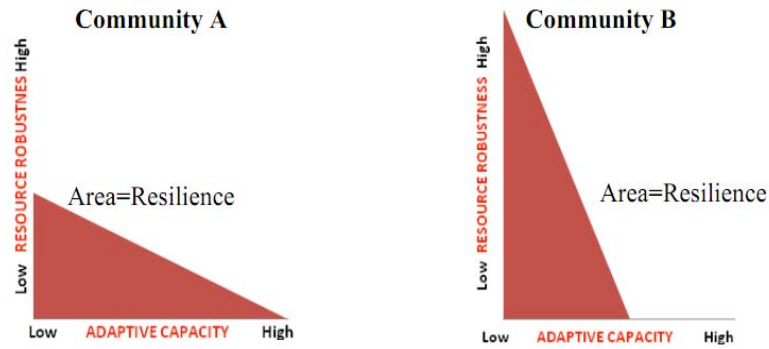


Figure 1. Resilience, as Influenced by Adaptive Capacity and Resource Robustness
(From Longstaff, Armstrong, Perrin, Parker, & Hidek, 2010)

The literature shows that building adaptive capacity essentially fosters increased resiliency by leading individuals to consider different ways to utilize resources. Because resource robustness can influence resiliency, but is often beyond the control of children, this suggests that focusing on adaptive capacity is the side of the equation that can be influenced for the benefit of children. Considering that there is a finite level of support that will be available from government following a large-scale disaster, this approach has the potential to circumvent some of the resource-based challenges to individual and community preparedness, especially those which relate to children, while still focusing on the goal of resiliency.

C. CASE STUDIES

1. Introduction, and the Story of Tilly Smith

The analysis of the case studies in this section will provide an analysis for elements of adaptive capacity and resource robustness with the intent that this will support the belief that resiliency among older children is often influenced by adaptive capacity, as opposed to resource robustness. It will also consider the inter-relationship between the two to consider how the presence of one may potentially amplify the other. While the focus of the case study analysis is primarily on identifying factors related to resiliency, they will also be examined for information relevant to the other research

questions. Case studies related to both survival of an imminent event, and responses to the post event phase are included in order to evaluate the practical relationship between adaptive capacity, resource robustness, and resiliency in multiple contexts.

There are many stories of children who have made a difference that has saved others during a disaster. Perhaps the most frequently shared one in the literature is of Tilly Smith, who saved her family and other tourists from a tsunami that hit Thailand in December of 2004. Tilly had recently finished learning about tsunamis in geography class. When she observed the water receding from the beach, she alerted her parents, who in turn told others. This warning resulted in Tilly, her family, and a number of other people reaching higher ground before the tsunami struck. In a media interview a year after the incident, Tilly reflected that she was glad she had learned about tsunamis in school but also that people had listened to her (Randall & Berger, 2005). The success in this story is that she was able to transfer the knowledge acquired in a geography lesson in to real life. What saved Tilly Smith and the people around her is a perfect example of how adaptive capacity influences survival in disaster situations, while Tilly and her family had no physical resources designed to help them survive a tsunami, none were needed because Tilly had the ability to apply what she knew, share it, and use it to influence the situation.

2. Tornado Strikes Springfield, Massachusetts

Other children have been able to utilize lessons learned in school or at home to protect themselves and their families. One example is nine-year old Megan Frisella of Springfield, Massachusetts, who fortuitously learned about tornadoes at the end of a school day in June of 2011. A few hours later, she put that lesson to use. Although tornadoes are rare in Massachusetts, they are not unheard of. When a tornado warning was issued, Megan told her mother about what she had learned in school. Megan's mother decided to take Megan's advice to get away from the windows and find a safe space. Megan, her sister, and her mother went to the basement to a room with no windows. When they emerged after the tornado, there was significant damage to their

home, the degree of which suggests they might have been badly injured had they not sought shelter in a basement. Megan's mother completely attributed their safety to the lesson Megan learned in school that day (Semon & Owen, 2011).

While it is true that the lesson in itself was an important part of their survival, it was Megan's ability to recognize that it was time to apply the lesson that actually made the difference. Megan and her family took action based on her ability to apply what she had learned to the cues in the environment; in this case, both the knowledge she had, and her ability to utilize this knowledge to convince the people around her was evidence of adaptive capacity. Having a home with a basement was a reflection of their resource robustness, yet, without the knowledge Megan had, and her ability to apply it (her adaptive capacity); the existence of the basement in itself did not ensure resiliency. This supports the theory that resiliency is influenced by adaptive capacity, and that it is possible to influence or build adaptive capacity in children through hazard-based education programs.

3. Flooding Recovery in Margaretville, New York

In August and September of 2012, upstate New York suffered devastating flooding as a result of Hurricane Irene, which was followed one week later by Tropical Storm Lee. During Hurricane Irene, the town of Margaretville, NY, which is located in Delaware County, was flooded with more than 16 feet of water, destroying most of the businesses, and many homes. Following the storm, media reports from across the region told stories of how people in impacted communities worked together. What stands out in the case of Margaretville is that there were many children who came out to volunteer.

A group of six teenage girls initially set out to help their town by showing up where there was work to be done and pitching in. They helped clean out the mud from a local store and recycle the bottles containing ruined food and drinks. No one told the girls to show up and help; they just decided that it was right thing to do. They helped local business owners along the main street clear their stores of debris, and when that was done; they set out to find who else need help, and what else needed to be done. One went

on to cooking for volunteers at the local fire hall, and while she was there, she worked on compiling lists of school supplies needed by children in the community. Media reports confirm that other children joined in the efforts to clean up Margaretville, including some who returned from college and brought friends along with them to help. As other local children came to town with their parents to see the damage, they too looked around to see what they could do to help, and set out to accomplish it.

In Margaretville, children worked alongside the adults as they cleared muck from the tennis courts at the school, shoveled out stores along the main streets, and hauled trash to dumpsters. In this case, their ability to help, and the acceptance of their help by adults was a reflection of adaptive capacity. These children, much like the adults, had no supplies, and no specific plan for who would do what. Clearly, no one ever could have expected the sort of devastation that occurred in Margaretville, and there was little they could have done to prepare for it. What these children had was a will to do something, and a belief that they could help. Because adaptive capacity is knowledge and thought based, the belief among these children that they knew what to do was enough to create resiliency despite low resource robustness. Interestingly, there is a second level on which gains occurred in this case. By understanding and accepting that children could help, the community effectively increased their resources, which in this case was the availability of physical labor, by accepting the help of the children. As the community resources increased, so did the overall resiliency of the community. The example of Margaretville shows how the relationship between adaptive capacity and resource robustness can amplify the collective resiliency within a community and highlights the importance and value of building adaptive capacity among children.

4. Conclusion

The literature, which considers the space where preparedness and resiliency intersect, confirms the idea that resiliency is not necessarily predicated on resource-based preparedness behaviors. Resiliency is instead highly dependent on the combination of adaptive capacity and resource robustness. Interestingly, resource robustness extends beyond the consideration of physical resources, which can be stockpiled to consider how

available resources can be used to meet an emerging or unexpected need. The case study from Margaretville, New York supports this assertion because the presence of children who helped with the clean up unexpectedly added to the pool of available resources, and thus, increased overall resiliency.

The cases evaluated in this section suggest that adaptive capacity is an extremely important aspect of resiliency. This is important because resiliency is about much more than survival. It considers the need for a community to return to normal, or adapt to a new sense of normal. There is some evidence that suggests that children are extremely well suited to this, and one possibility for why some children exhibit resiliency following traumatic events is that they lack pre-established beliefs that certain things cannot or should not happen (Corsano, 2005). The role that children played in the recovery of Margaretville is evidence of this.

Overall, these case studies support the literature, which suggests that children may be an untapped resource for building preparedness. Based on the evidence presented through these case studies, it is reasonable to believe that the same applies to the concept of building resiliency, especially among older children who have the ability to contribute to building resilient communities. Because resource robustness may vary, and given the ever changing nature of physical resources due to technological and scientific advancement, this supports the thesis that it may be valuable to move beyond event specific preparedness and focus more on long-term resiliency when designing and implementing programs for children.

D. ALIGNING RESILIENCY-BASED PROGRAMMING WITH EDUCATION

Children are seen as an ideal audience for preparedness, or resiliency-based education due to their flexibility and ability to look forward. Among the most compelling of the reasons for beginning with children, is the belief that the investment in children will pay off not just in terms of their ability to influence families, but also by seeding the future, so that tomorrow's adults grow up with clear expectations of personal responsibility for their own preparedness or resiliency. The evidence in the literature and

the case studies reviewed supports the idea that resiliency is a function of adaptive capacity and resource robustness. It is theorized that developing a model that considers both adaptive capacity and resource robustness would allow for educational programs to focus helping children develop skills for how to respond to situations, and it would be advantageous because they would avoid focusing on lessons that require social or physical resources.

This section of the thesis will explore the remaining three research questions in the hopes of providing recommendations on where such programming should occur, who should deliver it, and what would be taught. Because these subjects are heavily intertwined, there will be some overlap between the sections. Furthermore, the order in which they are being addressed, may to some degree, influence the course of the recommendations. Part of this exploration will consider how existing models for preparedness education might be modified to support a more resiliency-focused approach. It will also explore what new practices might be considered.

1. Exploring Where Resiliency-Based Programming Should be Facilitated

The recent trend has been to recommend that programming meant to help children prepare for disasters be delivered in schools. Placing this sort of programming in schools makes sense because of the connection between students, families and the school. Compulsory school attendance laws in the United States help to ensure that nearly all children would have access to this sort of programming. Furthermore, two of the case studies included in this thesis show a direct correlation between hazard-awareness education provided at school, and the ability of children to protect themselves and others around them in a disaster situation. An additional benefit to placing preparedness, or resiliency-based educational programming in schools, is the potential for connection between routine school safety operations and the subject matter.

There is substantial consensus in the literature that schools are the best venue for delivering preparedness education. Kevin R. Ronan and David M. Johnston explored the potential for this in their book *Promoting Community Resilience in Disasters: The Role*

for Schools, Youth and Families. Ronan and Johnston consider compulsory education laws as a way to ensure access to preparedness education for all children. In addition, their findings confirm that schools play an important role within communities, both in terms of being a hub of parent and child activity and in connecting families to a school-based community (Ronan & Johnston, 2005).

From an international perspective, there is an overwhelming consensus that preparedness, or disaster risk reduction education programming, should occur in schools. As part of their International Strategy for Disaster Reduction, the United Nations (UN) published a report in 2007 entitled *Towards a Culture of Prevention: Disaster Risk Reduction Begins at School. Good Practices and Lessons Learned*. This report evaluates the rationale behind utilizing schools in preparedness and risk reduction education, and finds that throughout the world, schools provide a single consistent point of contact between children, families and community, which makes them an ideal location for preparedness education. According to the report, the UN philosophy is that “... *schools are the best venue for sowing collective values, school students and teachers can serve as vehicles for building a culture of Prevention.*” (United Nations, 2007) The degree to which schools are thought to influence community behavior and impact long-term values in society reaffirms the idea that this sort of programming does belong in schools.

Integrating preparedness, or resiliency-based education programs in schools, provides an ideal opportunity to connect the school safety measures with the lessons that we want children to learn about either preparedness or resiliency. Schools in most states are mandated to conduct routine fire and lock down drills during the year. Although these drills provide a learning opportunity for children, children are rarely informed of the purpose of drills (Ramirez, Kubicek, Peek-Asa, & Wong, 2009). Unfortunately, this limits discussion or analysis about the potential situations the drills are held to prepare for. Tapping in to this opportunity is one way in which schools could begin to teach children about the role they can play in school, as well as their own personal safety. For example, discussing why lockdown drills are held would provide the opportunity for students to think about what they should do, if they see something that concerns them

during the day. While adults usually make the decisions regarding placing a school in lockdown, this does not mean that what students see or observe would not be useful information in making that decision. This sort of drill provides what educators refer to as a “teachable moment.” Teachable moments are not specific to the subject matter, but rather an opportunity to produce dialogue around a subject that considers both the opinion and ideas of the students, as well as the teacher.

Results from surveys conducted to assess the impact of the 2008 California ShakeOut Drill on schools supports the importance of school participation in drills that teach children preparedness or resiliency skills. The ShakeOut Drills, which are held annually in California, are aimed at preparing citizens for earthquakes. Schools are encouraged to register ahead of time and resources are available to help prepare school staff and students for participation. Data from the 2008 drill revealed that the schools that participated in the drill were found to have higher levels of comprehensive planning after participating than those that did not. They also found that students who had performed the prescribed “drop, cover and hold on” drills in their classrooms ahead of time were better prepared to utilize the skills in a drill than children who had not (Green & Petal, 2010). This supports the idea that actively engaging children and schools in activities related to preparedness in a school setting can produce outcomes that would be valuable during an actual event.

One of the weaknesses identified in relying on school-based programming is the lack of participation among private schools. The research on the 2008 ShakeOut identified that private schools participate in preparedness drills at a much lower rate than public schools, which suggests that targeting schools may not actually reach as high of a percentage of children as initially thought. In order to address this, better communication and increased outreach may be necessary to raise the levels of participation among private schools, which are estimated to teach approximately 11.3 percent of children in the country (Institute for Education Sciences, 2012). In order to determine how best to approach this gap, further analysis of whether this is specific to California, or occurs on a national basis, would be helpful. In the absence of such data, recommendations for

providing school-based preparedness or resiliency-programming should consider ways to reach nonpublic schools on a state-by-state basis. This should include the identification of professional organizations that nonpublic school administrators participate in and connecting with large organizations that sponsor nonpublic educational programs. It should also be acknowledged that there is a small percentage of children who are home schooled. Statistics from 2007 reveal that approximately 2.9 percent of children, who are considered school aged, are currently home schooled (Institute of Education Sciences, 2010). In order to account for this percentage, outreach efforts similar to those identified for private schools would be appropriate.

2. Considering Who Should Teach

Although cumulatively, the literature and evidence support the use of schools as the physical location for preparedness, or resiliency-based programming; suggesting that such programming occur in schools does not necessarily mean that school staff must provide the programming. Rather, it intended to highlight the value of the interaction between child, school, and community and is based on the belief that the school is the physical venue that encourages the interaction between the three. This suggests that additional consideration needs to be given to whether teachers are the best choice, or if there are better options for who could provide preparedness or resiliency-programming in school settings. This section of the thesis will explore possible options for who could teach preparedness or resiliency-based education to children in schools. The merits of each group, and the potential barriers to assigning the responsibility to that group, will be evaluated in this section, and recommendations made based on the findings. Preliminary research suggests that there are four possible groups that may be able to take on this role. These groups are:

1. Teachers
2. Public Safety Officials, such as Fire, or Police personnel
3. Private For-Profit Organizations
4. Volunteers and Nonprofit Organizations

One of the challenges to selecting schools as the venue is the pressure that it puts on schools to allocate resources and staffing. Schools across the country are already struggling with reduced budgets. In 2011, funding was cut for K-12 education in 34 states, and this trend is expected to continue in future years (Johnson, Oliff, & Williams, 2011). This forces schools to make difficult choices about what nonessential programming they can deliver. Because there is no federal, and with the exception of Michigan, no state mandate for preparedness or resiliency-education in public schools, it is likely that limited financial resources will be a significant barrier to implementing programming that is funded and staffed by schools (Hull, 2011).

Financial barriers are not the only issue when considering whether teachers should take on this role. Teachers are under increased pressure to prepare students for standardized testing as a result of the *No Child Left Behind* (NCLB) Act. Research on resource allocation and productivity in schools, since NCLB was implemented, suggests that non-mandated subjects are being bypassed in order to prepare children for these tests because school performance, and in some cases, teacher performance are measured by the results of these assessments (Reback, Rockoff, & Schwartz, 2011). This suggests that without a state-level mandate to implement standardized programming that teachers may not have time to, or be willing to, add preparedness or resiliency-education into their classroom. It also calls into question whether they could effectively comply were such a mandate imposed.

A different consideration regarding if teachers should hold the responsibility is what if any specialized training they should or would need to receive. Teacher education programs specialize based on age of children to be taught and subject content. There is no evidence to suggest that teachers have above-average knowledge of disaster preparedness or resiliency. Because teachers work with children every day, as assumption has been made that they are prepared to take on this additional responsibility. While core concepts of pedagogy do provide the skills to teach according to a lesson plan, research in

to teacher effectiveness suggests that instructional practices and teacher attitudes are equally, if not more influential, on positive teaching outcomes than teacher qualifications (Palardy & Rumberger, 2009).

If placing the responsibility on teachers is determined to be the best option, a decision needs to be made as to whether programming will be woven in to existing curriculum, or if it will be delivered in discreet units that have the potential but not a requirement to tie in to a specific area of learning. For example, the *Michigan Model for Health Emergency Preparedness* curriculum, which was implemented in September of 2011, is designed to fit within the existing *Michigan Model for Health* curriculum. Because of this, implementation requires minimal change to day-to-day practice for teachers (Michigan Department of Community Health, 2011). The challenges of utilizing this approach elsewhere include the fact that few states have mandatory K-12 supplemental health curricula, as well as how the addition of responsibilities on classroom teachers to deliver instruction on emergency preparedness or resiliency, would impact their ability to teach the existing mandated materials. Secondary to this, is consideration regarding teacher understanding of preparedness or resiliency messaging. Teachers have received no formal instruction on these subjects.

One potential solution to this would be to include this as a required subject in teacher preparation programs, and to include it as a continuing education module for existing teachers. This could be a viable option, if states choose to place priority on preparedness or resiliency-education being mandated in schools. The difficulties in implementing this would include the long-time frames needed to train all teachers, and identification of the time and resources for teachers to use to provide this sort of programming.

As an alternative to having teachers take on the responsibility for delivering preparedness or resiliency-based programming in schools, assigning the role to Public Safety personnel has been considered. Fire and Law Enforcement agencies already interact with schools on a variety of levels. This includes overall school safety, and

preplanning for life safety. In many regions, they also play a role in teaching children through initiatives for fire safety education, child safety, and Drug Abuse Resistance Education (DARE) programs.

Local fire department personnel are already involved in fire prevention outreach and education with children in many regions. While this might suggest that this group would be a good match for delivering preparedness or resiliency-based programming to children, consideration needs to be given to the makeup of the fire service workforce. According to the U.S. Fire Administration statistics from 2007, nationally, approximately 70 percent of fire companies were staffed entirely by volunteer firefighters (United States Department of Labor, 2009). This would suggest that placing the responsibility on fire service may not be a good option because of the reliance on volunteers who may have limited ability to commit time during the school day to this sort of effort. While in areas with paid fire departments, it might be possible to establish programs; the fact that fire departments could not take on this role consistently across regions is a concern.

In consideration of using paid law enforcement personnel, School Resource Offices are an option, however, not all school have them. Additionally, the number of School Resource Officers declined 8.9 percent between the periods 2004 to 2007. This, combined with ongoing debate over the practice of placing officers in schools, may make utilizing them a challenge (Price, 2011). In terms of utilizing paid law enforcement, population statistics estimate that there are reportedly 2.3 police officers per 1000 people in the U.S. Higher concentrations are often seen according to population density around urban areas, which suggests that availability could be an issue in rural areas (Carsey Institute, 2012). More importantly, while public outreach is an important aspect of Law Enforcement, it is not the primary mission.

While preparedness or resiliency-based education is important, it would be difficult to argue that it is so critical that it justifies diverting law enforcement resources away from their primary mission. Furthermore, the makeup of the fire service across the country suggests that it would be difficult to place this responsibility on a primarily volunteer workforce. The mission and current efforts of public safety organizations

provide an opportunity through which they could supplement efforts to provide preparedness or resiliency-based education programs in schools but not assume responsibility for design and delivery of them.

Given the barriers identified to placing this responsibility on teachers of public safety officials, partnerships with private agencies may be an option. There are businesses throughout the country that focus on school safety. One example is an organization called National School Safety and Security Services based out of Cleveland, Ohio. This is a for-profit organization that will consult with school administrators and staff to address school safety issues (National School Safety and Security Services, 2012). This particular organization is representative of a private industry, which has emerged to provide consultation to schools in order to address concerns related to school violence and emergency planning and preparedness. Typically, these companies are run by retired law enforcement or security personnel who will consult with school districts to help them develop plans to meet, or supplement state minimum guidelines (American School Safety, 2011).

From the perspective of school administrators, it can be challenging to select an organization to consult on safety and security procedures because there are no established standards or credentialing for individuals or groups offering these services (Trump, 2008). The primary focus of these organizations is on helping schools plan for children, as opposed to working with children. While there is currently no evidence that these sorts of organizations would want to assume the role of delivering preparedness or resiliency-based education programming to children in schools, if there was, it would call for further evaluation of the experience and credentials they have to work with children. Considering the use of for-profit entities to provide these services would also require identifying funding for this purpose, establishing metrics for performance standards, and consideration of issues related to fair billing and accountability.

Existing nonprofit agencies could be considered as an alternative to for-profit entities. This could include organizations, such as the American Red Cross, which has already been involved in the development of the *Masters of Disaster* preparedness based

curriculum for children (American Red Cross, 2012). The concerns that arise regarding using nonprofit organizations to fill this role include sustainability and availability across regions. Utilizing nonprofit organizations could be problematic when no organization within a region was available or interested in taking on the responsibility. In that situation, potentially, the responsibility would either default to the schools and teachers, or the programming simply would not be delivered. Volunteers from the community could potentially be used to supplement nonprofit organization paid staff. Some concerns regarding using volunteers would need to be addressed, including determining the availability of a volunteer force, procedures for the vetting of volunteers for work in schools, and the need for training on content area and skills to work with children. Overall, concerns regarding sustainability, and return on investment for the training, might be substantial enough to discount the use of volunteers.

Considering the use of volunteers and nonprofit entities could also include utilizing AmeriCorps participants as a resource. AmeriCorps is a national community service program, which is administered through the Corporation on National and Community Service. AmeriCorps participants are contracted to serve for a term, which ranges between ten months and a year during which they are assigned to a project area. Project areas vary widely and can range from working with children on literacy, to urban restoration, to environmental preservation and restoration. Participants receive a modest stipend while working for AmeriCorps, and upon completion of their service commitment, receive an educational award, which can be used for college or vocational education programs.

According to statistics provided by AmeriCorps, in fiscal year 2011, 3.5 million disadvantaged youth were tutored, mentored, or otherwise served by AmeriCorps participants. The existing focus that AmeriCorps has placed on education and support of high-risk populations is a strength that should be considered when assessing the viability of involving them in delivering preparedness or resiliency-focused programming to children. Also, supporting the idea that AmeriCorps might be a valuable resource is the fact that Disaster Response was included as one of the focus areas of the 2011–2015

strategic plan (Corporaton for National and Community Service, 2011). Among the advantages of using AmeriCorps participants is the structure of the program, which requires training for work assignments as a standard part of the program, and mechanisms for oversight of participants by paid program staff. Because AmeriCorps has a history of focusing on addressing gaps in the educational system, this suggests they are well suited to develop programming that works in conjunction with schools. Because of the long-standing focus of AmeriCorps on working to build resilient communities, and the recent priority assigned to Disaster Response, considering the role of AmeriCorps members participating in the delivery of school-based programming may be a valuable approach.

The number of barriers that can be identified to getting consistent implementation of preparedness or resiliency-based education by teachers in schools suggests that alternative options may a better choice at this point in time. Among the choices examined, the use of AmeriCorps participants to provide this service appears to offer the most promise. Because sustainability is always a concern, utilizing AmeriCorps may be a short-term solution that could address the need while more long-term solutions are worked out. This suggestion is made based on the belief that teachers would be an ideal group to provide this sort of programming because of their ability to work it into the day-to-day activities of the school year. Further examination of how this could be accomplished is recommended; as is consideration of how AmeriCorps could either fill the role short term, or what advantages long-term investment in AmeriCorps filling this role might have over training teachers to do so.

3. Deciding What to Teach

The research regarding the role of adaptive capacity in creating resiliency strongly supports the idea that a resiliency-based approach to working with children may be a mechanism to overcome a lack of social or financial capital. Adaptive capacity is based on the need to consider emergent and unexpected situations, as opposed to preparing for expected ones. For that reason, it allows for, and even encourages, a creative perspective to meeting each person's own needs. This may be advantageous as an approach because

it could allow children to develop plans that work for them, and avoid creating barriers for those children who cannot fully participate, or for whom the current model of preparedness does not make sense.

For example, as evidenced in the Student Tools for Emergency Planning (STEP) program checklist (Figure 1), preparedness based education programming stresses the importance of assembling a kit. Similarly, the Red Cross *Masters of Disaster*, FEMA Ready Kids, *Ready...Set ...Prepare* activity books and the Readykids website also stress the importance of creating a kit. In the *Ready...Set ...Prepare* activity book for ages four through seven, it stresses that making a kit is “one of the first fun things” a child can do to get prepared (FEMA, 2012). Based on this, from a preparedness approach, a child who has not assembled a kit cannot fully participate in the program because making a kit is a required part of participating. This suggests that there is only one way to prepare and establishes a pass/fail situation where either a child can participate or not. This mindset effectively limits the ways a child can think about participation.

What Goes in an Emergency Kit?



Name: _____

Choose and circle 10 items you believe are the most important to include in a family emergency kit. Be prepared to explain why you picked those particular things. Later, use this list with your family to assemble your emergency kit. Put your kit in a place that is easy to get but is also in an area that won't be in the way of everyday activities.

Food	Water
Flashlight	Radio, extra batteries
Bag/container for items	Credit card or cash
Coins	Clothes and shoes
Plastic storage containers	Car keys
Non-electric can opener	Vitamins
Forks, spoons, plates, cups	Emergency preparedness book
Fire extinguisher	Compass
Tent	Map
Pliers and wrench	Signal flare
Needle and thread	Whistle
Plastic sheeting	Toilet paper
Soap	Disinfectant
First aid kit	Rain gear
Blankets or sleeping bag	Gloves
Book, puzzle or game	Family documents and records
Prescription drugs	Eyeglasses/contact lenses
Pens and Paper	Plastic garbage bags and ties
Toothbrush and toothpaste	Deodorant
Favorite stuffed toy	Pet supplies

Figure 2. What Goes in an Emergency Kit (From FEMA, 2010)

From a resiliency perspective, focusing on adaptive capacity means that a child who does not have resources, but can establish a realistic plan to meet their needs, can still be successful. For example, a child who cannot assemble their own kit, but who can develop and investigate the viability of a plan to go to the local church to find food and water, has essentially found a way to meet the same needs without having to have the physical resources. The advantages of focusing on adaptive capacity are not limited to removing barriers for children with limited financial means. As Longstaff and colleagues suggest, adaptive capacity amplifies resource robustness, which suggests that this approach could help those with means to obtain some resources increase their overall resiliency. Consider how a child in a rural community may know that extra gasoline to

run a generator, which could power a well, is equally, if not more valuable, than stocking gallons of water. Similarly, for a child living near an unpolluted water source, a gallon of bleach and the knowledge of how to use it to purify the available and otherwise safe drinking water, may be more valuable than a prepackaged gallon of water. Challenging children to think in this manner may provide new and different solutions to the basic needs that they would have during a disaster. More importantly, it helps them identify their individual needs, which is critical to getting them to understand the importance of the topic.

Consideration of needs-based preparedness is not inconsistent with the current underlying philosophy behind preparedness education. The UN philosophy behind school-based preparedness programming is that such educational programs will create cultural change through the establishment of collective values, which prompt children to take action. This philosophy is expressed in the following quote from the report: *“Prevention begins with information. Awareness is the first step toward action. Awareness can trigger interest, interest can lead to attention, and attention can prompt action.”* (United Nations, 2007) The UN approach is based on the belief that by giving children the skills to take action, they will be able to provide for their own safety. This places the focus on meeting the needs of the individual, as opposed to performing a specific set of scripted actions.

The study of the 2008 California ShakeOut drill included direct observation and qualitative analysis of student behavior during the drill. What was found was that students who had performed the prescribed “drop, cover and hold on” drills in their classrooms were prepared to utilize the skills in a drill. While this is supportive of the idea of teaching preparedness in schools, one of the concerns that arose from the drill was the confusion that very specific standardized messaging can create. Observers noted that while most students could perform the drop, cover and hold on process as had been taught, they found that both students and adults were at a loss for what to do when there were no desks or tables in the room. Similar confusion was noted when people were too large to fit under the available desks or tables. (Green & Petal, 2010). In this case,

because the children and adults had been taught one very specific way to act in a particular situation, they were unable to adapt. This suggests that focusing too heavily on specific actions can be detrimental to preparedness initiatives because they script the approach, as opposed to teaching applicable skills.

In the case studies reviewed earlier in the thesis, it was the ability to apply the lesson learned regarding how to recognize a tsunami, or what to do when a tornado is imminent that made for positive outcomes. According to Ronan and Johnston, a hazard-based approach should underlie efforts to develop preparedness education for children (Ronan & Johnston, 2005). Hazard-based approaches focus on knowing what hazards exist and recognizing signs and signals in order to trigger decision making. This supports the idea that resiliency-based education that focuses how to identify threats, and consider options, may be worth considering as an alternative to scripted protective measures as typify a preparedness-based approach. It also aligns with Palin's research, which was explored in the literature review. Palin argued that resiliency can be developed using an approach that starts with awareness, and then focuses on the interrelationships between social connections, facts, ability to consider new ideas and flexibility (Palin, 2011). The intended outcome of this approach is flexibility, which in this case, is representative of adaptive capacity. This further supports the idea that programs that focus on taking action, as opposed to what specific action should be taken, are consistent with a resiliency-oriented approach.

A final observation regarding what to teach stems from consideration of the availability of several different models of preparedness curriculum, such as the FEMA and Red Cross models. There is to a certain degree, a lack of clarity regarding who owns or is responsible for preparedness initiatives. The general sense is that practices are defined on the federal level and shared through FEMA via the *Ready* campaign and *Ready Kids*, yet organizationally, they have no direct responsibility in delivering of the services other than by making them available. This presents a situation where there is no clear mechanism for feedback from practitioners, or recipients of programming, to the governing body, which is designing the programming. Similarly, no such process is

evident to provide feedback to the Red Cross *Masters of Disaster* program, which was observed to still contain information on the now retired Homeland Security Advisory System. Addressing this disconnect is critical to making sure that any sort of programming remains current and is flexible enough to stay relevant and be effective.

IV. CONCLUSION AND RECOMMENDATIONS

A. RESEARCH FINDINGS

As the preceding chapters demonstrate, there is an identified connection between adaptive capacity and resiliency. According to PPD-8, preparedness is considered a shared responsibility between citizens and government based on the belief that preparedness will foster resiliency. Because resiliency is the goal of current preparedness efforts, and there are many identified barriers for children engaging in preparedness behaviors, this thesis explored the possibility of focusing on an alternative approach; one of building resiliency among children. As the literature shows, the high level of influence that adaptive capacity has on overall resiliency suggests that resiliency can be established even with minimal resources. This supports the hypothesis that it may be possible to increase resiliency through educational programs designed to build adaptive capacity among children, rather than by focusing on resource based preparedness programs.

Regardless of whether a preparedness or resiliency-based approach is used to teach children skills that would help them in a catastrophe, there are underlying issues that need to be resolved. These include where to teach, who should teach, and determining what should be taught. There is an overwhelming agreement in the literature that schools are the best place to deliver preparedness, or resiliency-based programming, because they are the only consistent point of contact through which to reach children. This is in part due to the existence of compulsory education laws, which prime schools to be the mechanism for communication of information to the highest possible percentage of children. In addition, there is a lack of evidence or substantial argument against the use of schools. Similarly, there is no specific argument or evidence that suggests the use of alternate locations would be more beneficial. Because of this, the conclusion can be drawn that schools are the best place for this effort.

The recommendation to use schools as the physical venue for preparedness or resiliency education is not intended to place the responsibility for delivering the programming on schools, but rather to highlight their critical importance in the process

because they can provide access to the highest number of children possible. Exploring the options for who should provide preparedness, or resiliency-based programming in schools, revealed that training on the subject area is an issue for any group who will take on this responsibility. Although there are advantages to having teachers integrate this sort of programming into the day-to-day delivery of instruction, there are also substantial barriers to placing this responsibility on them at this time. Coming to an agreement that this is a priority in the educational process is necessary in order to provide a climate where teachers are empowered to integrate this sort of programming in schools—and are afforded sufficient time to do so. Long-term investment in training teachers on the subject would also be necessary as the current workforce has received limited training on the subject. Until this is accomplished, placing the responsibility on teachers is not considered a viable option.

The use of AmeriCorps participants emerged from the research as a potentially viable option, which warrants further exploration. This is because AmeriCorps is already funded, has proven to be sustainable; and has an existing relationship and track record for delivering programming in schools. Options, such as the use of public safety personnel, private for-profit organizations, and volunteer or nonprofit organizations were also considered as alternatives to having teachers assume the responsibility for the delivery of preparedness or resiliency-based programming in schools. It was determined that there is a lack of sufficient resources among public safety professionals to place the responsibility on this group. A number of issues were identified that would need to be addressed in order to use private for-profit organizations to contract with schools. These issues include identifying funding, procedures for vetting of staff that would have contact with children, and oversight of programming. Similar issues were identified in considering the use of volunteer and nonprofit groups. Although there is not a financial concern to using volunteers or nonprofit groups other than AmeriCorps, the need for evidence of sustainable commitment to providing this sort of programming to children is an equally significant challenge because the scope of having AmeriCorps provide preparedness, or resiliency-based education to all children, is enormous and well beyond the current staffing levels of the program.

In terms of what to teach, because adaptive capacity has been shown to be a mechanism through which low-resource robustness can be overcome, programming focused more heavily on the adaptive capacity aspect of creating resiliency would be a beneficial approach for educating all children. This is because focusing on adaptive capacity allows for development of programming that accounts for variations in resource robustness among individual children and communities. A resiliency-based approach may also be advantageous given the ever changing nature of physical resources due to technological and scientific advancement. This perspective provides an opportunity to move beyond event specific preparedness and focus more on long-term resiliency. The advantages of such an approach arise from the fact that resiliency can be described as a fluid state of being that provides skills to sense and responds to complex and changing situations. While some disasters are clear at initiation, many are not. To respond to this, hazard-based programming for children needs to focus on recognizing the situational cues and identifying the needs of the individual.

Finally, in order to establish a sustainable and resilient process for working with children, the system itself has to identify the available resources, and consider its own adaptive capacity. The literature and case studies all support the idea of resiliency as an ongoing process that learns and evolves over time and is based on situational influences. Accounting for this in developing and managing programming will require establishing a process through which stakeholders could review, revise, and be challenged to consider the need for changes in practice over time. The resources available today will not be the same as the ones available in the next year or decade, and it is impossible to accurately predict what may exist. Similarly, ideas regarding individual and community responsibility, methods of teaching, and the way children are viewed in society will also change. Failure to account for this might severely limit the potential of a resiliency-based approach to working with children, the adaptation of it for caregivers of children, or applicability to the population in general. For that reason, consideration of how adaptive capacity and resource robustness influence the system itself is an important component of building a program designed to promote resiliency among children.

B. PRACTICAL APPLICATION OF A RESILIENCY-BASED APPROACH

Development of programming focused on resiliency rather than preparedness can provide an opportunity for all children to participate equally by removing the barriers that present in situations where a child has limited social or financial resources. It is possible that implementation of this approach may be as simple as changing how we frame the questions we ask when using a hazard-based approach to working with children. This would require shifting from the current a philosophy where we ask “Are you prepared?” to one where children would be asked “Do you know what you could do?” The goal of this sort of programming would be to help children identify their own needs and determine how they can fill them, rather than prescribing the method for them that may not necessarily be a good match. This could be accomplished through developing new programming, or the modification of existing preparedness focused materials, to realign them with a resiliency-based message. Both options should be considered based on merits, and feasibility. Consideration should be given to pilot programs of this approach in communities that have not responded to preparedness-based initiatives, or where financial barriers are clearly evident.

The idea of utilizing AmeriCorps participants for providing either preparedness or resiliency-focused education should be explored further as a mechanism to provide this sort of programming in schools. This could be considered a long-term solution, but to make it viable, commitment from the federal government to continue funding of AmeriCorps, and possibly to increase funding, might be necessary to accomplish this on a national basis. In terms of establishing long-term sustainability, further consideration should be also given to how teachers could be prepared to eventually assume the responsibility for delivering this sort of programming. This would require implementing requirements in teacher preparation programs, as well as for continuing education.

C. CHALLENGES, OPPORTUNITIES, AND RECOMMENDATIONS FOR FUTURE RESEARCH

Currently, the ideas contained in this thesis are theoretical. There are a number of areas of research that could be explored based on the findings of this thesis. The first is to

consider whether programs that remove dependency on resources, and focus on adaptive capacity, are more effective than the existing programs. Research on this could be conducted by evaluating the learning outcomes of similar groups presented with the two different models. Benchmarks for this sort of research could include child learning, as well as influence on family learning. Due to the fact that existing preparedness education programming is currently delivered sporadically, additional research would be required to determine, if resiliency-based educational programming that focuses on building adaptive capacity, is more effective than the existing preparedness focused programming.

Additional research would be needed to determine what the actual barriers to having teacher delivered programming are and to consider the advantages or disadvantages of utilizing groups other than teachers in the process. Other research opportunities would arise from studying the efficacy of the utilization of AmeriCorps members to delivering either preparedness-based or resiliency-based programming in schools. This could be accomplished through comparing outcomes between similar groups of children who are teacher led, as compared to AmeriCorps led programming, as well as comparing preparedness-focused to resiliency-focused programming among the groups.

If resiliency-focused programming were implemented, one of the pitfalls would be to consider a shift from preparedness-programming to resiliency-based programming a onetime adjustment. There needs to be an established agreement on how to manage this on an on-going basis. This should include oversight that ensures practices keep up with the needs of, as well as the changes of society, schools and children. One of the weaknesses of the preparedness-based approach is that there is no mechanism built to allow it to learn and change in reaction to new information and emerging trends. Additional inquiry in to how this could be built in to a resiliency-focused approach would be a valuable exploration that could enhance the sustainability of the approach.

D. EPILOGUE

The following essay was posted by a student identified only as “Katie” on the Public Broadcasting System (PBS) Newshour Student Voice website. Katie identifies herself as a high school senior who attends Schoharie High School, in Schoharie, New York. This essay is her first-hand account of her experiences following the devastation to the town of Schoharie resulting from Hurricane Irene. What Katie’s essay very eloquently expresses is both the deep connection she has to her community, but also the resiliency she saw emerge among the residents in the days after the storm.

As this story will tell, most of the resources of the community had been lost; yet, it was the ability of the people, including the children of this community, to show up and work together that mattered. We have no way of knowing what resources Katie and the people with her had, as they spent the time during the evacuation, or exactly what they had when they returned to the flooded Schoharie Valley, but what is clear from her words is that they were resilient, that they adapted and figured out how they could reclaim their homes and heal as a community. Essentially, they knew how to make stone soup.

The worst day of my life was not the day my family was told to evacuate our antiquated farmhouse in the village of Schoharie during the last week of summer.

It wasn’t the hours we spent hurriedly lugging everything valuable out of our dank basement in anticipation of the coming storm as flood sirens wailed.

Neither was it that night as a group of friends forced out of their homes sojourned on higher ground, waiting in silence around an ancient radio for news of the imminent disaster.

It could have been that next rain-soaked dawn when the daylight filtering through the clouds revealed the magnitude of the flood spawned by Hurricane Irene. A swell of water thirteen feet above recorded levels had utterly devastated our village of a thousand people, engulfing eighty percent of our town, all our local farms, and my home of seventeen years.

I paced on the hillside, anxious for when the National Guard would allow us to walk down our streets now caked in mud and sewage.

I squirmed during the prolonged waiting because I'm a doer- perhaps a trait that comes from years of diligent, honest farm work in a rural community. I wasn't irate at the flood, a fluke disaster; I was disconcerted that I couldn't do anything to make my village right again, to re-lay each ruined brick foundation, or to scrape the mud off every bedroom floor.

Eventually our community of doers was able to plunge into the wreckage with the same voracity with which the water had torn into it; for weeks, the town was a cluster of sodden buildings swarming with even soggier neighbors and volunteers.

We worked together tearing out walls with sickening squelches from our homes, dumping refrigerators full of sludge and squirming maggots into the road. We moved on to see which of our neighbors needed a hand, or even a shoulder to slump on. In those days after the flood, I was aware that we were being stripped down and exposed like the frames of the houses in which we were born.

In a crisis, true traits emerge; you were either a doer, or not. You were a pair of hands helping someone to piece their life together, or you were busy holding on for dear life. You metamorphosed into an optimist, turning pages of your muddied photo album to see if there were any salvageable snapshots, or you weren't.

I'm thankful for such values as these that the people of Schoharie have instilled in me since I was born, and for the collective spirit that drives us to return day after day. Here, the optimist's silver lining is sometimes elusive as we search for it amidst the mud that the clouds engineered instead. In my mind, the silver is omnipresent; it is found in the glint of nails being hammered into homes, in the triumph of an heirloom plucked from the mud, and in the reflection on a swollen creek slowly receding to run its natural course through a valley once more.

(Katie, 2011)

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